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**SB—07—2022**

**FACULTY OF SCIENCE**

**B.Sc. (Third Year) (Fifth Semester) EXAMINATION**

**MAY/JUNE, 2022**

**(CBCS/New Pattern)**

**CHEMISTRY**

**Paper—XII**

**(Organic Chemistry + Inorganic Chemistry)**

**(Monday, 6-6-2022)**

**Time : 10.00 a.m. to 12.30 p.m.**

*Time— 2½ Hours*

*Maximum Marks—40*

*N.B. :— (i) Attempt All questions.*

*(ii) Figures to the right indicate full marks.*

1. Solve any *three* of the following :

(a) Define stereoisomerism ? Explain geometrical isomerism in complexes with co-ordination no. 6.

(b) Define Effective Atomic Number ? Calculate the EAN of the following complexes :



(c) Define the following terminology :

(i) Complex ion;

(ii) Co-ordination sphere;

(iii) Co-ordination No.

(iv) Oxidation No.

(v) Ligands.

P.T.O.

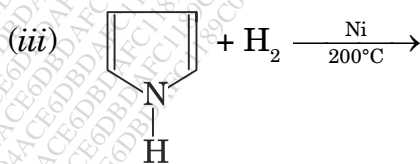
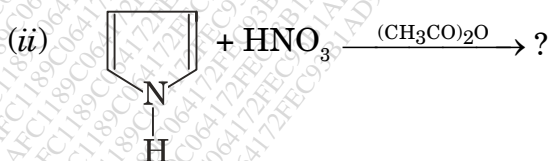
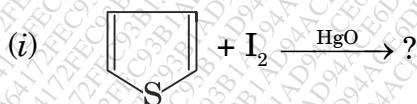
- (d) Explain the chemotherapeutic action of anti-cancer drug cis-platin.
- (e) What is rheumatoid arthritis disease ? Give an example of anti-arthritis drugs for the treatment.

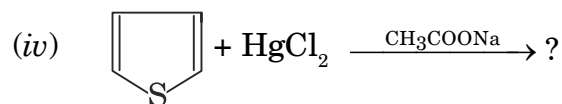
2. Solve any *three* of the following : 15

- (a) Define Heterocyclic compounds. Explain molecular orbital picture of Furan.
- (b) What are drugs ? Explain the following terms with suitable example :
- (i) Antipyretic;
  - (ii) Analgesic;
  - (iii) Antibacterial;
  - (iv) Antimalarial.
- (c) Give the classification of dyes based on methods of applications.
- (d) What are alkaloids ? Give the general properties of alkaloid.
- (e) What are herbicides ? Give the preparation and uses of the following pesticides :
- (1) Gammahexane;
  - (2) Chloranil.

3. Solve any *two* of the following :

- (a) Predict the products :





(b) Explain aromatic character of pyridine. What happens when pyridine is treated with :

(i) KOH;

(ii) NaNH<sub>2</sub>

(c) Offer the synthesis and uses of the following drugs :

(i) Isoniazid;

(ii) Aspirin.

(d) Give the name of the diseases caused by the deficiency of the following vitamins :

(i) Vit.A

(ii) Vit.D

(iii) Vit.C

(iv) Vit.E

(v) Vit.K